

**THIS OPINION WAS NOT WRITTEN FOR PUBLICATION**

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ANTON D. HEINRICHS and STANLEY R. GRANT

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Appeal No. 97-2608  
Application No. 08/568,146<sup>1</sup>

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ON BRIEF

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Before ABRAMS, McQUADE and CRAWFORD, *Administrative Patent Judges*.

ABRAMS, *Administrative Patent Judge*.

**DECISION ON APPEAL**

This is an appeal from the decision of the examiner finally rejecting claims 1-4, which constitute all of the claims of record in the application.

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<sup>1</sup>Application for patent filed December 6, 1995.

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The appellants' invention is directed to a closed refrigeration system in which refrigerant in the expanded state is used to cool the compressor motor. The subject matter before us on appeal is illustrated by reference to claim 1, which reads as follows:

1. A closed refrigeration system serially including a motor-compressor, a discharge line, a condenser, a heat exchanger economizer, an expansion device, an evaporator and a suction line, and temperature control means comprising:

means for sensing a parameter representative of operating temperature of said motor;

means for supplying an expanded flow through said economizer to said motor of said motor-compressor for cooling said motor;

means for controlling said means for supplying an expanded refrigerant flow responsive to said means for sensing.

#### **THE REFERENCES**

The references relied upon by the examiner to support the final rejection are:

Shaw	4,947,655	Aug.
14, 1990		
Heinrichs et al. (Heinrichs)	5,475,985	Dec.
19, 1995		

(filed Dec. 14, 1993)

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Japanese Application<sup>2</sup>  
1992  
(Kimura)

4-43261

Feb. 13,

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<sup>2</sup>A copy of the PTO translation of this reference is enclosed.

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### **THE REJECTION**

Claims 1-4 stand rejected under 35 U.S.C. § 103 as being unpatentable over Heinrichs in view of Kimura and Shaw.

The rejections are explained in the Examiner's Answer.

The opposing viewpoints of the appellants are set forth in the Brief and the Reply Brief.

### **OPINION**

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness (*In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993)), which is established when the teachings of the prior art itself would appear to have suggested the claimed subject matter to one of ordinary skill in the art (*In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993)). If the examiner fails to establish a *prima facie* case, the rejection is improper and will be overturned (*In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988)).

The objective of the appellants' invention is to provide improved cooling for the motor that drives the compressor in a closed refrigeration system. Claim 1, the sole independent claim, recites the components of a closed refrigeration system, and includes "means for supplying an expanded flow" to the motor-compressor for cooling the motor. As disclosed, this comprises a subsystem including a temperature sensor and processor which operate an expansion valve that can allow liquid refrigerant exiting from an economizer to be expanded to the gaseous state and then introduced into the motor to cool the motor.

It is the examiner's position that the subject matter of claim 1 is rendered obvious by the combined teachings of Heinrichs in view of Kimura and Shaw.<sup>3</sup> It is his view that Heinrichs teaches everything recited in claim 1, except for the economizer, which would have obvious to one of ordinary skill in the art in view of the teachings of either of the secondary references. We do not agree.

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<sup>3</sup>While the rejection states Kimura and Shaw, these references actually are applied in the alternative.

Like the appellants, Heinrichs wishes to utilize refrigerant from the closed system to cool the motor, when necessary. However, as the appellants have strongly argued, Heinrichs utilizes liquid refrigerant to do so, rather than the "expanded flow" required by claim 1. Heinrichs makes this very clear in the specification. In column 1, the following statement appears in the summary of the invention:

Basically, liquid injection is used to cool the motor of a motor compressor responsive to the motor temperature (column 1, lines 39 and 40, emphasis added).

In going on to describe the preferred embodiments of the invention, Heinrichs refers only to the flow of "liquid refrigerant" into the motor for cooling (column 2, lines 24 and 32). The use of refrigerant in the expanded state is disclosed, however, it is with regard to injecting refrigerant into the compressor to control its exit gas temperature (column 2, lines 34-39). Furthermore, both of Heinrichs' claims recite that the refrigerant which cools the motor is in the liquid state (column 2, line 56 and column 4, line 4). Finally, while Heinrichs describes the valve that controls the flow of refrigerant into the compressor as an expansion valve

(column 2, line 38), the valve that controls the flow of refrigerant into the motor is designated merely as a "pulsed solenoid valve" (column 2, line 2).

The examiner has recognized that "[t]he reference does not use the language expanded flow in reference to the flow of liquid refrigerant" (Answer, page 3, emphasis added). However, it is his view that one of ordinary skill in the art nevertheless would have known that the "pulsed solenoid valve 24" actually must be an expansion valve, for if the refrigerant did not expand at that point it could not cool the motor (Answer, page 4). We are not persuaded by this conclusion, which is not based on any evidence and which flies in the face of very definitive statements to the contrary which appear in the text of the reference.

Since neither of the two secondary references provide any teaching that would alleviate this shortcoming in Heinrichs, it is our opinion that the teachings of the references relied upon in the rejection fail to establish a *prima facie* case of obviousness with respect to the subject matter of claim 1. We therefore will not sustain the rejection of claim 1 or, it follows, of claims 2-4, which depend therefrom.

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The decision of the examiner is reversed.

**REVERSED**

NEAL E. ABRAMS	)	
Administrative Patent Judge)	)	
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	)	
JOHN P. McQUADE	)	BOARD OF PATENT
Administrative Patent Judge)	)	APPEALS AND
	)	INTERFERENCES
	)	
MURRIEL E. CRAWFORD	)	
Administrative Patent Judge)	)	

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